REMARKS

In response to the Office Action mailed February 24, 2006, Applicants respectfully request reconsideration. To further the prosecution of this application, each of the objections and rejections set forth in the Office Action has been carefully considered and is addressed below. The application as presented is believed to be in condition for allowance.

Claim Objections

The Office Action objects to minor informalities in claims 98 and 105. Each of these claims has been amended to correct these informalities. Accordingly, it is respectfully requested that the objections to these claims be withdrawn.

Rejections Under 35 U.S.C. §103

The Office Action rejects all currently pending claims (i.e., claims 96-113) under 35 U.S.C. §103 as purportedly being obvious in view of Kim ("Design of Software Systems Based on Axiomatic Design," *International Journal of Robotics and CIM*, Vol. 8, no 4, pp. 243-55). Applicants respectfully traverse this rejection.

I. Rule 132 Declaration

To further the prosecution of this application, Applicants submit herewith a declaration under 37 C.F.R. §1.132 from Dr. Sang-Gook Kim (hereinafter "Kim Declaration"), a professor at the Massachusetts Institute of Technology and a co-author (and principal author) of Kim, the sole reference applied in the rejection of claims 96-113 (Kim Declaration, ¶1 and ¶4). Dr. Kim's declaration is helpful in understanding how one of skill in the art would have understood the teachings of the prior art and what modifications one of skill in the art would have been motivated to make based on these teachings. It is respectfully asserted that the rejections cannot properly be maintained in view of Dr. Kim's declaration.

II. No *Prima Facie* Case Of Obviousness

The rejection of claims 96-113 under 35 U.S.C. §103 as purportedly being obvious in view of Kim is improper, as the Office Action has failed to establish a *prima facie* case of obviousness. MPEP §2142 requires that, "[t]o establish a *prima facie* case of obviousness three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference...must teach or suggest all claim limitations."

The Office Action has failed to establish a *prima facie* case of obviousness as (A) there is no motivation to modify Kim in the manner asserted in the Office Action and (B) Kim fails to disclose or suggest all claim limitations.

A. *There Is No Motivation To Modify Kim In The Manner Asserted In The Office Action*

The Office Action asserts that, "it would be obvious for one skill in the art at the time the invention was made to implement the modules associated with each FRs as intended by Kim, so that these module being stored in existing libraries or legacy database be reuse object-oriented classes or packages..." *See* Office Action, page 4, lines 15-18. Applicants respectfully disagree with this assertion. In addition, Dr. Kim also disagrees that one of skill in the art would have been motivated to modify Kim in this manner (Kim Declaration, ¶7).

Kim discloses the development of a software module database that provides, for each FR, a list of modules (i.e., design parameters (DPs)) that can satisfy that FR. *See* Kim, page 253, left column, lines 13-23. For example, Kim states that, "the first equation for FR1/1 states that one of the modules (e.g, DP1/1, DP2/1, DP 3/1, DP 10/1, etc.) in the database can be used to control FR1/1." *See* Kim, page 253, left column, lines 15-23.

Thus, Kim discloses that each module in the database corresponds to a design parameter (DP). Nowhere does Kim disclose, suggest, or even mention that a module in the database corresponds to a functional requirement (FR). Further, while Kim discloses that software modules

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may correspond to design parameters there is nothing in Kim that suggests that each of these design parameters is implemented as an object-oriented software object.

Thus, Kim fails to disclose or suggest, "using the design matrix to define an object-oriented structure of the software system, wherein at least one functional requirement in the hierarchy of functional requirements represents a software object of the software system, and wherein at least one design parameter in the hierarchy of design parameters represents an input to the software object," as recited in claim 96.

Further, Dr. Kim disagrees with the assertion in the Office Action that Kim suggests the use of object-oriented techniques in developing software. Specifically, Dr. Kim disagrees with the assertion in the Office Action that the decomposition of functional requirements into a hierarchy would have suggested the concept of class inheritance to one of skill in the art (Kim Declaration, ¶5). Dr. Kim also disagrees that the use of the software module database disclosed in Kim suggests implementing a functional requirement as an object-oriented class or package (Kim Declaration, ¶7).

It is respectfully asserted that the rejections of claims 96-113 under 35 U.S.C. §103 over Kim cannot properly be maintained in view of Mr. Kim's declaration, as the declaration establishes that one of skill in the art would not have been motivated to modify Kim in the manner alleged in the Office Action. Thus, it is respectfully asserted that these rejections be withdrawn.

B. *The Reference Fail To Disclose All Claim Limitations*

The Office Action has additionally failed to establish a *prima facie* case of obviousness because Kim does not disclose all claim limitations. Claim 96 is directed to a method of designing a software system. The method comprises: defining a set of functional requirements that describe what the software system is to achieve; defining a set of design parameters, where each design parameter in the set satisfies at least one of the functional requirements; decomposing the set of functional requirements and design parameters to create a hierarchy of functional requirements and a hierarchy of design parameters, wherein at least one functional requirement of the set of functional requirements is a parent functional requirement at a first level in the hierarchy of functional requirements and is decomposed into at least two child functional requirements at a second level in

the hierarchy that is below the first level, and wherein the at least two child functional requirements collectively accomplish the parent functional requirement; defining a design matrix that maps each design parameter in the hierarchy of design parameters to the at least one functional requirement in the hierarchy of functional requirements that the respective design parameter satisfies; and using the design matrix to define an object-oriented structure of the software system, wherein at least one functional requirement in the hierarchy of functional requirements represents a software object of the software system, and wherein at least one design parameter in the hierarchy of design parameters represents an input to the software object.

The Office Action concedes that Kim does not disclose, "using the design matrix to define an object-oriented structure of the software system, wherein at least one functional requirement in the hierarchy of functional requirements represents a software object of the software system, and wherein at least one design parameter in the hierarchy of design parameters represents an input to the software object," as recited in claim 96. *See* Office Action, page 4, lines 5-6. It is improper to assert that a claim limitation is obvious even though that limitation is nowhere to be found in the prior art. To do so is to vitiate the limitation from the claim. For the rejection to be proper, all claim limitations must be found in the prior art. The Office Action fails to cite a reference that discloses representing a functional requirement of a design matrix as a software object and representing a design parameter of the design matrix as an input to the software object.

Claims 97-105 depend from claim 96. Thus, each of these claims also recites a limitation that is not found in Kim.

Claim 106 also recites, "using the design matrix to define an object-oriented structure of the software system, wherein at least one functional requirement in the hierarchy of functional requirements represents a software object of the software system, and wherein at least one design parameter in the hierarchy of design parameters represents an input to the software object." As should be clear from the discussion above, Kim does not disclose this limitation. Claims 107-113 depend from claim 106. Thus, each of these claims also recites a limitation that is not found in Kim.

In view of the foregoing, it is respectfully requested that the rejection of claims 96-113 under 35 U.S.C. §103 be withdrawn for this additional reason.
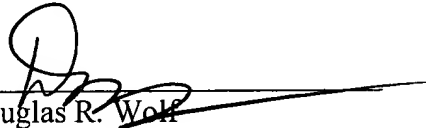
CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the undersigned at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Dated: July _14_, 2006

Respectfully submitted,

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